SANTA CRUZ BIOTECHNOLOGY, INC.

Reg II (K-14): sc-103857

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The regeneration (Reg) family consists of secretory proteins involved in liver, pancreatic, gastric and intestinal cell proliferation or differentiation. Members of the REG family are divided into four subclasses, designated types I, II, III and IV, and have been implicated in the regulation of cell growth, tumorigenesis and the progression of cancer. Reg II (regenerating islet-derived 2), also known as pancreatic stone protein 2, lithostathine-2, pancreatic thread protein 2, MGC107500, PSP, PTP or Islet of Langerhans regenerating protein 2, is a 173 amino acid protein that may inhibit spontaneous calcium carbonate precipitation and contains one C-type lectin domain. Reg II is highly expressed in regenerating islets and normal exocrine pancreas, but not in normal pancreatic islets. Reg II is also weakly expressed in liver. Reg II may be a candidate for cytoprotection of exocrine pancreas, and is linked to pancreatic β-cell growth and development of type 1 diabetes.

REFERENCES

1. Unno, M., Yonekura, H., Nakagawara, K., Watanabe, T., Miyashita, H., Moriizumi, S., Okamoto, H., Itoh, T. and Teraoka, H. 1993. Structure, chromosomal localization, and expression of mouse Reg genes, Reg I and Reg II. A novel type of Reg gene, Reg II, exists in the mouse genome. J. Biol. Chem. 268: 15974-15982.
2. Perfetti, R., Egan, J.M., Zenilman, M.E. and Shuldiner, A.R. 1996. Differential expression of Reg-I and Reg-II genes during aging in the normal mouse. J. Gerontol. A Biol. Sci. Med. Sci. 51: B308-B315.
3. Abe, M., Nata, K., Akiyama, T., Shervani, N.J., Kobayashi, S., Tomioka-Kumagai, T., Ito, S., Takasawa, S. and Okamoto, H. 2000. Identification of a novel Reg family gene, Reg IIIδ, and mapping of all three types of Reg family gene in a 75 kilobase mouse genomic region. Gene 246: 111-122.
4. Lieu, H.T., Simon, M.T., Nguyen-Khoa, T., Kebede, M., Cortes, A., Tebar, L., Smith, A.J., Bayne, R., Hunt, S.P., Brechot, C. and Christa, L. 2006. Reg II inactivation increases sensitivity to Fas hepatotoxicity and delays liver regeneration post-hepatectomy in mice. Hepatology 44: 1452-1464.
5. Gurr, W., Shaw, M., Li, Y. and Sherwin, R. 2007. Reg II is a β-cell protein and autoantigen in diabetes of NOD mice. Diabetes 56: 34-40.
6. Zhong, B., Strnad, P., Toivola, D.M., Tao, G.Z., Ji, X., Greenberg, H.B. and Omary, M.B. 2007. Reg II is an exocrine pancreas injury-response product that is upregulated by keratin absence or mutation. Mol. Biol. Cell 18: 4969-4978.
7. Wilding Crawford, L., Tweedie Ables, E., Oh, Y.A., Boone, B., Levy, S. and Gannon, M. 2008. Gene expression profiling of a mouse model of pancreatic islet dysmorphogenesis. PLoS ONE 3: e1611.

CHROMOSOMAL LOCATION

Genetic locus: Reg2 (mouse) mapping to 6 C3.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SOURCE

Reg II (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Reg II of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103857 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Reg II (K-14) is recommended for detection of Reg II of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with family member Reg I.

Molecular Weight of Reg II: 19 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.